



The Microburst



Volume 4, Issue 2

November 2004

Special STANYS Edition of the Microburst

NOAA and NWS Information for Science Teachers

Scott Reynolds
Editor of the Microburst,
Senior Forecaster, NWS Upton NY

The Microburst is a newsletter published several times per year by the National Weather Service in Upton NY (Long Island), for its volunteer severe weather (SKYWARN) spotters, local emergency management, and emergency responder personnel. However, this special edition has been designed to provide information for science teachers around the Empire State.

We hope that you find this helpful in your science instruction endeavors. If you have any questions regarding any of the information presented here, please feel free to contact your local NWS office. Contact information is included later in this newsletter.

NOAA and the NWS ... Science Resources for All

Who We Are and What We Do...

<http://www.noaa.gov>

The National Oceanic and Atmospheric Administration (NOAA), formed on October 3, 1970, is a diverse agency whose scientific domain spans the distance from the surface of the sun to the bottom of the sea. NOAA's roots extend back to the administration of Thomas Jefferson in the early 1800s.

NOAA, an agency of the Department of Commerce, serves the nation in many environmental capacities, from providing timely and precise weather and climate forecasts, to managing fisheries and building healthy coastlines, to making our nation more competitive through safe navigation and examining changes in the oceans.

Today, six important components make up NOAA. Each component is described below.

National Ocean Service (NOS, or NOAA Oceans)

The NOS actually has its roots dating back to the beginning of the 19th century, when President Thomas Jefferson created the first science agency of the United States: the Survey of the Coast. NOS measures and predicts coastal and ocean phenomena, protects large areas of the oceans, works to ensure safe navigation, and serves the American public in many other ways.

As the trustee for 12 marine protected areas, NOAA protects National Marine Sanctuaries, which are akin to national underwater parks. Each sanctuary has a unique goal. While one may protect the breeding ground of humpback whales, for example, another preserves the remains of historical shipwrecks, and still another protects thriving coral reef colonies.

National Environmental Satellite, Data, and Information Service (NESDIS, or NOAA Satellites and Information)

INSIDE THE MICROBURST

- 1 Special STANYS Edition of the Microburst
- 1 NOAA and the NWS ... Science Resources for All
- 1 NOAA Oceans, NOAA Satellites and Information
- 2 NOAA Fisheries, NOAA Research, NOAA Marine and Aviation Operations, NOAA National Weather Service
- 3 NOAA/NWS Meteorological Resources
- 4 Educational Resources
- 5 Preparedness Resources
- 5 NOAA All-Hazards Radio
- 6 NOAA Homepages
- 6 Local NOAA/NWS Line Offices and Contact Information

Continued on page 2

NESDIS is dedicated to providing timely access to global environmental data from satellites and other sources to promote, protect, and enhance the Nation's economy, security, environment, and quality of life. NESDIS manages the Nation's operational environmental satellites, provides data and information services, and conducts related research. The National Climatic Data Center (NCDC), located in Asheville, NC, is probably the best-known office within NESDIS.

National Marine Fisheries Service (NMFS, or NOAA Fisheries)

NOAA Fisheries is responsible for the management, conservation and protection of living marine resources within the United States Exclusive Economic Zone. They also play a supportive and advisory role in the management of living marine resources in coastal areas under state jurisdiction, provide scientific and policy leadership in the international arena and implements international conservation and management measures as appropriate.

NOAA Fisheries is the direct descendant of the U. S. Commission of Fish and Fisheries, the nation's first federal conservation agency, initiated in 1871 to protect, study, manage and restore fish. Woods Hole, MA, became home to the first marine fisheries research lab and is still home to one of NOAA's five fisheries science centers.

Office of Oceanic and Atmospheric Research (OAR, or NOAA Research)

NOAA's research is the driving force behind NOAA environmental products and services that protect life and property and promote sustainable economic growth. Research, conducted in in-house laboratories and by extramural programs, focuses on enhancing our understanding of environmental phenomena such as tornadoes, hurricanes, climate variability, solar flares, changes in the ozone, El Niño/La Niña events, fisheries productivity, ocean currents, deep sea thermal vents, and coastal ecosystem health. NOAA Research also develops innovative technologies and observing systems.

The NOAA Research network consists of 12 internal research laboratories, extramural research at 30 Sea Grant university and research programs, six undersea research centers, a research grants program through the Office of Global Programs, and 11 cooperative institutes with academia. Through NOAA and its academic partners, thousands of scientists, engineers, technicians, and graduate students participate in furthering our knowledge of natural phenomena that affect the lives of us all.

NOAA Marine and Aviation Operations (NMAO)

NMAO operates a wide variety of specialized aircraft and ships to complete NOAA's environmental and scientific missions. NMAO is also responsible for the administration and implementation of the NOAA Diving Program to ensure a level of diving skill conducive to safe and efficient operations in NOAA-sponsored underwater activities.

NOAA's Aircraft Operations Center (AOC), located at the MacDill AFB in Tampa, FL, is home to NOAA's fleet of aircraft. The hard-working versatile aircraft collect the environmental and geographic data essential to NOAA hurricane and other weather and atmospheric research; provide aerial support for coastal and aeronautical charting and remote sensing projects; conduct aerial surveys for hydrologic research to help predict flooding potential from snow melt, and provide support to NOAA's fishery research and marine mammal assessment programs.

NOAA's ship fleet provides hydrographic survey, oceanographic and atmospheric research, and fisheries research vessels to support NOAA's strategic plan elements and mission.

National Weather Service (NWS)

When Congress transferred weather services from the Army to the new Department of Agriculture in 1890, the Weather Bureau, a new civilian weather service and ancestor of NOAA's NWS, was born. By the end of the century the Weather Bureau published its first Washington, D.C., weather map (1895), established the first hurricane warning service (1896) and began regular kite observations (1898). Today's NWS uses complex technologies such as weather satellites, Doppler radar, automated surface observing systems, sophisticated computer models, high-speed communications systems, flying meteorological platforms, and a highly-trained and skilled workforce to issue more than 734,000 weather and 850,000 river and flood forecasts, and between 45,000 and 50,000 potentially life-saving severe weather warnings annually.

NWS data is a national resource. Government agencies, private companies, the media, universities and the public all use NWS data.

For more information on NOAA or any agency within NOAA, check out the NOAA Web Pages at <http://www.noaa.gov>, or contact your local NOAA office (listing on the contact page).

NOAA/NWS Meteorological Resources

Surface Observations and Analyses

FSL (Forecast Systems Lab.) - (METAR/ Mesonet)
<http://www.frd.fsl.noaa.gov/mesonet/>

NWS Observations Page
<http://www.nws.noaa.gov/om/osd/portal.shtml>

NWS – About ASOS
<http://www.nws.noaa.gov/ost/asostech.html>

HPC (Hydrometeorological Prediction Center)
Hourly Surface Data Plot
<http://www.hpc.ncep.noaa.gov/sfc/sfcobs/sfcobs.shtml>

HPC Current Surface Analysis Chart
<http://www.hpc.ncep.noaa.gov/html/sfc2.shtml>

Upper Air Observations and Analyses

NWS Upper Air Charts
<http://weather.noaa.gov/fax/barotrop.shtml>

NWS - about Upper Air Observations
<http://www.ua.nws.noaa.gov/factsheet.htm>

FSL Upper Air Observations Database
<http://raob.fsl.noaa.gov/>

Doppler Radar Observations

NWS Doppler Radar Page
http://www.nws.noaa.gov/radar_tab.php

NWS - About Doppler Radar
<http://www.weather.gov/radar/radinfo/radinfo.html>

Satellite Imagery

NOAA Satellites and Information (NESDIS)
<http://www.goes.noaa.gov/>

River Information

NWS River Data Page
http://www.nws.noaa.gov/rivers_tab.php

NWS Hydrologic Information Center
<http://www.nws.noaa.gov/oh/hic/current/riverflooding/Stages.shtml>

Buoy/Tide Data

National Data Buoy Center (NDBC) Home Page
<http://www.ndbc.noaa.gov/rmd.shtml>

NOS Center for Operational Oceanographic Products and Services (CO-OPS) - <http://co-ops.nos.noaa.gov/>

Other Online Dataset Links

University of Oklahoma's Cooperative Institute for Mesoscale Meteorological Studies (CIMMS)
<http://www.cimms.ou.edu/~schultz/data/>

NHC/TPC Links to Other Real Time Data Sites
<http://www.nhc.noaa.gov/aboutlinkrealtwx.shtml?>

National Forecast Maps

NOAA Stormwatch <http://www.noaa.gov/stormwatch/>

NWS National Forecast Maps
http://www.nws.noaa.gov/outlook_tab.php

NWS Graphical Forecasts (Nat'l Digital Forecast Database)
<http://weather.gov/forecasts/graphical/sectors/index.php>

Hydrometeorological Prediction Center (HPC)
<http://www.hpc.ncep.noaa.gov>

HPC Day 1 and 2 Forecast Charts
<http://www.hpc.ncep.noaa.gov/basicwx/basicwx.shtml>

HPC Days 3 through 7 Forecast Charts
<http://www.hpc.ncep.noaa.gov/medr/medr.shtml>

HPC QPF (Quantitative Precipitation Forecasts)
<http://www.hpc.ncep.noaa.gov/qpf/qpf2.shtml>

HPC Excessive Rainfall Forecasts
http://www.hpc.ncep.noaa.gov/qpf/excess_rain.shtml

HPC Winter Weather Forecasts
http://www.hpc.ncep.noaa.gov/wwd/winter_wx.shtml

Severe Weather / Fire Weather

Storm Prediction Center (SPC) - <http://www.spc.noaa.gov>

All SPC Forecast Products (Text and Graphical)
<http://www.spc.noaa.gov/products/>

SPC Forecast Tools (Maps, etc.)
<http://www.spc.noaa.gov/exper/>

SPC Severe Weather Event Archive (since January 2000)
<http://www.spc.ncep.noaa.gov/exper/archive/events/>

SPC Fire Weather Forecasts
http://www.spc.noaa.gov/products/fire_wx/

Tropical Prediction Center / National Hurricane Center
<http://www.nhc.noaa.gov/>

Climate Prediction Center (CPC)
<http://www.cpc.ncep.noaa.gov/>

CPC Outlooks
<http://www.cpc.ncep.noaa.gov/products/forecasts/>

CPC Hazards Assessment
<http://www.cpc.ncep.noaa.gov/products/predictions/threats/threats.html>

Model Data

NCEP Model Analyses and Forecasts
<http://www.nco.ncep.noaa.gov/pmb/nwprod/analysis/>

MDL MOS Forecasts
<http://www.nws.noaa.gov/mdl/synop/products.shtml>

Educational Resources

*A Sampling of Resources Available on the Web...
Non-NOAA Sites are included, but do not imply NOAA
endorsement of the site.*

NOAA Educational Pages <http://www.education.noaa.gov/>

NESDIS Education and Outreach Page
http://www.nesdis.noaa.gov/outreach_edu.html

NCDC Educational Climate Resources Page
<http://www.ncdc.noaa.gov/oa/climate/climateresourceseducational.html>

NOS Education Page
<http://www.oceanservice.noaa.gov/education/welcome.html>

NOAA Research Education and Outreach Page
<http://www.oar.noaa.gov/education/>

NSSL Educational Resource Web Page
<http://www.nssl.noaa.gov/resources/>

NWS Education and Outreach Pages

Teacher Resources/Weather Education
<http://www.nws.noaa.gov/om/edures.htm>

Public Outreach Links
<http://www.nws.noaa.gov/om/reachout/index.shtml>

Kid's Page (geared toward grades K-6)
<http://www.nws.noaa.gov/om/reachout/kidspage.shtml>

NWS Southern Region HQ
JetStream Weather School
<http://www.srh.noaa.gov/jetstream/>

Skywatcher Chart
<http://www.srh.noaa.gov/skywatcher.htm>

National Weather Service Training Center (NWSTC)
<http://www.nwstc.noaa.gov>

US Colleges and Universities Offering Meteorology/
Atmospheric Science Degree Programs (from NSSL)
<http://www.nssl.noaa.gov/edu/schools.html>

University at Albany <http://www.atmos.albany.edu/das.html>

SUNY Brockport <http://www.weather.brockport.edu/>

Stony Brook University <http://atmos.msfc.sunysb.edu/>

SUNY Oneonta
<http://www.oneonta.edu/academics/earths/Meteorology.asp>

SUNY Oswego
http://www.oswego.edu/Acad_Dept/a_and_s/earth.sci/meteorol/

Cornell University <http://www.geo.cornell.edu/eas/index.html>

Lyndon State College (VT) <http://apollo.lsc.vsc.edu/>

Millersville University (PA) <http://www.atmos.millersville.edu/>

Penn State University (PA) <http://www.met.psu.edu/>

Plymouth State University (NH) <http://vortex.plymouth.edu/>

Plymouth State Cloud Boutique
<http://vortex.plymouth.edu/clouds.html>

University of Illinois at Urbana-Champaign Online
Meteorology Guides
[http://ww2010.atmos.uiuc.edu/\(Gh\)/home.rxml](http://ww2010.atmos.uiuc.edu/(Gh)/home.rxml)

NASA Education Web Site <http://education.nasa.gov>

Digital Library for Earth Science Education
<http://www.dlese.org/>

Environment Canada Education Web Pages
http://www.msc-smc.ec.gc.ca/education/index_e.cfm

American Red Cross Disaster Services Educator's
Information
http://www.redcross.org/services/disaster/0,1082,0_503_00_.html

**COMET (Cooperative Program for Operational
Meteorology, Education and Training, Boulder, CO)**
<http://www.comet.ucar.edu/>

Meteorological Education and Training Page
<http://meted.ucar.edu>

(K-12 and General Interest)
http://meted.ucar.edu/comm_k12.htm

Project LEARN: Cycles of the Earth and Atmosphere
<http://www.ucar.edu/learn/>

AMS (American Meteorological Society)
<http://www.ametsoc.org/>

AMS Education Initiatives Pages
<http://64.55.87.13/amsedu/index.html>

Datastreme Atmosphere (A Cooperative Educational
Program between AMS/NWS)
<http://www.ametsoc.org/dstreme>

Datastreme Ocean
<http://64.55.87.13/amsedu/DS-Ocean/index.html>

Datastreme WES (Water in the Earth System)
<http://64.55.87.13/amsedu/WES/index.html>

Project ATMOSPHERE Educational Materials
http://64.55.87.13/amsedu/AERA/ed_mats.html

Career Information
<http://www.ametsoc.org/pubs/careers.html>

NWA (National Weather Association)
<http://www.nwas.org>

NWA Education Committee Web Page
http://www.nwas.org/committees/ed_comm/index.html

Preparedness Resources

... From NOAA and our partners ...

NOAA/NWS Preparedness Brochures

<http://www.nws.noaa.gov/om/brochures.shtml>

NWS Safety Information Page

<http://weather.gov/safety.php>

Owlie Skywarn: Watch Out...Storms Ahead

<http://www.nws.noaa.gov/om/brochures/OwlieSkywarnBrochure.pdf>

American Red Cross Disaster Services Home Page

(including many preparedness brochures)

http://www.redcross.org/services/disaster/0,1082,0_319_00.html

Federal Emergency Management Agency (FEMA)

<http://www.fema.gov>

(Disasters and Emergencies Page)

<http://www.fema.gov/library/dizandemer.shtm>

(Preparation and Prevention)

<http://www.fema.gov/library/prepandprev.shtm>

(FEMA For Kids: Becoming a Disaster Action Kid)

<http://www.fema.gov/kids/dizkid1.htm>

(Citizen Corps)

<http://www.citizencorps.gov/>

Winter Weather

"Winter Storms...The Deceptive Killers"

<http://www.nws.noaa.gov/om/brochures/winterstorm.pdf>

Severe Thunderstorms and Tornadoes

"Thunderstorms, Tornadoes, Lightning...Nature's Most Violent Storms"

<http://www.nws.noaa.gov/om/brochures/ttl.pdf>

Floods

"Floods...The Awesome Power!"

http://www.nws.noaa.gov/om/brochures/Floodsbrochure_9_04_low.pdf

"The Hidden Danger: Low Water Crossing"

<http://www.nws.noaa.gov/om/brochures/TheHiddenDangerEnglish.pdf>

"Turn Around, Don't Drown" Campaign

<http://weather.gov/os/water/tadd/>

Lightning

NOAA Lightning Safety Web Site

<http://www.lightningsafety.noaa.gov>

Heat Wave

<http://www.nws.noaa.gov/om/brochures/heatwave.pdf>

Hurricanes

Hurricanes...Unleashing Nature's Fury

<http://www.nws.noaa.gov/om/brochures/hurr.pdf>

"Hurricane Flooding: A Deadly Inland Danger"

<http://www.nws.noaa.gov/om/brochures/InlandFlooding.pdf>

Red Cross: Atlantic Hurricane Tracking Map

<http://www.nws.noaa.gov/om/brochures/atlchartshpmlclr.pdf>

Safe Boating/Marine Weather

"Safe Boating Weather Tips"

<http://www.nws.noaa.gov/om/brochures/safeboat.htm>

"Mariner's Guide to Marine Weather Services Coastal, Offshore and High Seas"

http://www.nws.noaa.gov/om/brochures/mw_coastal.pdf

Rip Currents: "Break the Grip of the Rip" Campaign

<http://www.ripcurrents.noaa.gov>

NOS FAQs about Ties

<http://co-ops.nos.noaa.gov/faq1.html>

NDBC FAQs

<http://www.ndbc.noaa.gov/faq.shtml>

StormReady

<http://www.stormready.noaa.gov/>

<http://www.nws.noaa.gov/om/brochures/StormReady-brochure.PDF> (Brochure)

SKYWARN

(NWS Upton NY)

<http://www.erh.noaa.gov/okx/Skywarn/skywarn.html>

(NWS Albany NY)

<http://www.erh.noaa.gov/aly/Skywarn.htm>

(NWS Binghamton NY)

http://www.erh.noaa.gov/bgm/spotter_front.html

(NWS Burlington VT)

<http://www.erh.noaa.gov/btv/html/skywarn/skywarn.shtml>

(NWS Buffalo NY)

<http://www.erh.noaa.gov/buf/spt.htm>

Basic Spotter's Field Guide

<http://www.nws.noaa.gov/om/brochures/basicspot.pdf>

Advanced Spotter's Field Guide

http://ftp.nws.noaa.gov/om/brochures/adv_spotters.pdf

NOAA All-Hazards Radio

NOAA Weather Radio Brochure

http://www.nws.noaa.gov/om/brochures/nwr_brochure.pdf

New York State Coverage and Transmitters

<http://www.nws.noaa.gov/nwr/states/newyork.html>

NOAA Homepages

NOAA Homepage <http://www.noaa.gov>

National Weather Service (NWS) Homepage
<http://www.weather.gov> or <http://www.nws.noaa.gov>

National Ocean Service (NOS) Homepage
<http://oceanservice.noaa.gov>

National Environmental Satellite, Data, and Information
Service (NOAA Satellites and Information, NESDIS)
<http://www.nesdis.noaa.gov>

National Climatic Data Center (NCDC)
<http://www.ncdc.noaa.gov>

National Marine Fisheries Service (NOAA Fisheries, NMFS)
<http://www.nmfs.noaa.gov>

Office of Oceanic and Atmospheric Research (NOAA
Research, OAR)
<http://www.research.noaa.gov>

NOAA Marine and Aviation Operations (NMAO)
<http://www.nmao.noaa.gov/>

NWS National Forecast Centers...

Aviation Weather Center (AWC)
<http://aviationweather.gov/>

Climate Prediction Center (CPC)
<http://www.cpc.ncep.noaa.gov/>

Environmental Modeling Center (EMC)
<http://www.emc.ncep.noaa.gov/>

Hydrometeorological Prediction Center (HPC)
<http://www.hpc.ncep.noaa.gov>

Ocean Prediction Center (OPC)
<http://www.opc.ncep.noaa.gov/>

Space Environment Center (SEC)
<http://www.sec.noaa.gov/ncep/>

Storm Prediction Center (SPC)
<http://www.spc.noaa.gov>

Tropical Prediction Center (Nat'l Hurricane Ctr., TPC)
<http://www.nhc.noaa.gov>

Local NOAA/NWS Line Offices and Contact Information

NOAA in and near the Empire State

*For the entire listing, go to
<http://www.legislative.noaa.gov/noaainyourstate/newyork.html>*

MIC = Meteorologist-in-Charge
WCM = Warning Coordination Meteorologist
SOO = Science and Operations Officer

NWS Upton NY

...serving New York City, Long Island, Lower Hudson Valley
of New York, Northeast New Jersey and Southeast
Connecticut...

<http://www.erh.noaa.gov/okx> (631) 924-0517
MIC: Michael Wyllie WCM: Gary Conte
SOO: Jeff Tongue

NWS Albany NY

...serving much of eastern New York, southern Vermont,
western Massachusetts and northwest Connecticut...

<http://www.erh.noaa.gov/aly> (518) 435-9580
MIC: Gene Auciello WCM: Ray O'Keefe
SOO: Warren Snyder

NWS Buffalo NY

...serving parts of western, central and northern New York...

<http://www.erh.noaa.gov/buf> (716) 565-0204
MIC: Tom Niziol WCM: Stan Levine
SOO: vacant

NWS Binghamton NY

...serving the Southern Tier and parts of central New York,
and north central Pennsylvania...

<http://www.erh.noaa.gov/bgm> (607) 729-1597
MIC: Barbara Watson WCM: David Nicosia
SOO: Mike Evans

NWS Burlington VT

...serving most of Vermont and northern New York...

<http://www.erh.noaa.gov/btv> (802) 862-2475
MIC: Bob Bell WCM: Steve Hogan
SOO: Paul Sisson